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L6 and I3	64

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L7 L6 and I3 64 L7

L6 (wafer or substrat\$) same (clean\$ or etch\$ or remov\$) same (immers\$ or submerg\$) same (nitrogen or 'N.sub.2') 738 L6

L5 4778532.pn. 1 L5

L4 5082518.pn. 1 L4

DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

L3 ((134/2 |134/11 |134/25.1 |134/25.4 |134/30 |134/31 |134/34 |134/37 |134/902)!.CCLS.) 6046 L3

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<u>L10</u>	((wafer or substrat\$) with (clean\$ or etch\$ or remov\$) same (immers\$ or submerg\$ or dip\$) same (nitrogen or 'N.sub.2')	740	<u>L10</u>
<u>L9</u>	L6	738	<u>L9</u>
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DB=USPT; PLUR=YES; OP=ADJ

<u>L7</u>	L6 and l3	64	<u>L7</u>
<u>L6</u>	(wafer or substrat\$) same (clean\$ or etch\$ or remov\$) same (immers\$ or submerg\$) same (nitrogen or 'N.sub.2')	738	<u>L6</u>
<u>L5</u>	4778532.pn.	1	<u>L5</u>
<u>L4</u>	5082518.pn.	1	<u>L4</u>

DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L3</u>	((134/2 134/11 134/25.1 134/25.4 134/30 134/31 134/34 134/37 134/902)!.CCLS.)	6046	<u>L3</u>
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L7: Entry 55 of 64

File: USPT

Dec 3, 1991

DOCUMENT-IDENTIFIER: US 5069235 A

TITLE: Apparatus for cleaning and rinsing wafers

Brief Summary Paragraph Right (26):

These and other objects of the present invention are realized in a particulate embodiment of a rinsing and cleaning apparatus which includes a tank formed entirely of polymeric material such as polypropelene, PVDF, and/or Teflon which is formed with smooth continuous Interfaces. The interior surfaces of the tank are shaped to conform to the configuration of the circular disc like wafers when such are located therein in side by side parallel spaced apart relationship and held in their proper position by supporting devices commonly referred to as "boats". The tank includes a boat support platform located adjacent the bottom thereof on which the boats are placed and below which, at the bottom of the tank, pass a water inlet manifold system, a nitrogen gas manifold system, a chemical injection port system and a fluid monitoring port. The tank is sized to allow water therein to completely submerge the wafers located therein and has its upper edge formed into a weir about its entire circumference for purposes of allowing water to cascade thereover to remove light weight contaminants from the tank. The support plate has a plurality of uniform openings therethrough which allow flow from the water manifold system, the nitrogen manifold system, and the chemical injection system, to pass therethrough to fill the tank, the tank being contoured in such a manner that the flow characteristics of the water and nitrogen across the wafers are optimized for particulate and chemical removal therefrom with minimization of redeposition thereof onto other wafers. Also, the contours of the tank allow for complete, "clean" dumping of water out of the bottom thereof in a vortex-form manner which tends to pull contaminants out of the tank.

Current US Cross Reference Classification (3):134/902

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L7: Entry 15 of 64

File: USPT

Mar 13, 2001

DOCUMENT-IDENTIFIER: US 6199564 B1

TITLE: Substrate processing method and apparatus

Detailed Description Paragraph Right (48):

When wafers W immersed in and processed with a chemical liquid, such as HF, contained in the processing tank 21 are lifted out of the processing tank 21 and are carried to another processing tank 21 or the cleaning tank 21A, a clean gas, such as N.sub.2 gas, is ejected upward by the clean gas ejecting pipes 74 from below the wafers W to suppress the downward flow of the processing liquid adhering to the wafers W, so that the etching uniformity of oxide films or the like formed on the surfaces of the wafers W can be improved.

Detailed Description Paragraph Right (61):

The wafers WE in Example 2 were prepared by immersing fifty wafers W coated with films in a dilute hydrogen fluoride solution (DHF: 1:50) for 5 min or in a dilute hydrogen fluoride solution (DHF: 5:1) for 1 min, rinsing the processed wafers W in ultrapure water for 5.5 min, and then drying the rinsed wafers W for 9 min. Nitrogen gas was ejected on the wafers W while the wafers W were being carried to the cleaning tank. The twenty-sixth wafer WE was subjected to etching depth measurement. Values of the etching depth were determined by measuring the thickness of the film at measuring points before processing and after processing. Measured values of the etching depth are shown in Table 4 and FIG. 17.

Current US Cross Reference Classification (3):134/902

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File: USPT

Jul 4, 2000

DOCUMENT-IDENTIFIER: US 6082381 A

TITLE: Treatment apparatus

Brief Summary Paragraph Right (5):

A widely used conventional cleaning apparatus of this type includes a cleaning vessel or other treatment means which store a cleaning liquid to immerse wafers, etc. into the cleaning agent to clean their surfaces; a cleaning liquid supply pipe connecting the cleaning vessel to a pure water supply source; and a chemical liquid reservoir storing a chemical liquid and connected to the cleaning liquid supply pipe, so as to infuse the chemical liquid to the pure water flowing through the cleaning liquid supply pipe with the aid of a compressed carrier gas, such as nitrogen (N.sub.2) gas, into the chemical liquid in the chemical liquid reservoir so that the chemical liquid of a predetermined concentration be supplied into the cleaning vessel and used for cleaning objects to be processed.

Current US Cross Reference Classification (3):134/902~~1757/2334652~~

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L7: Entry 57 of 64

File: USPT

Mar 5, 1991

DOCUMENT-IDENTIFIER: US 4997490 A

TITLE: Method of cleaning and rinsing wafers

Brief Summary Paragraph Right (6):

In the cascade overflow method, a tank is filled with deionized water until it overflows. The wafers are submerged in the upwardly flowing water in the tank. The upward flow of water carries chemicals and contaminants away from the wafers. Nitrogen is commonly bubbled into the upward flow of water to assist in cleaning and rinsing the wafers as well as reducing residual oxidation of the wafer surfaces.

Current US Cross Reference Classification (1):134/34Current US Cross Reference Classification (2):134/902